CLAIMS

1. A wiring substrate equipped with a rerouted wiring having one end connected to an electronic-part mounting pad for electrically connecting an electronic part and another end connected to an external-connection terminal, in which a base body of said wiring substrate comprises a low-elasticity underlayer, made of a material having a lower modulus of elasticity than that of the base material, between the base material of the wiring substrate and each of the electronic-part mounting pad and the rerouted wiring.

2. A wiring substrate according to claim 1, in which a high-elasticity underlayer, made of a material having a higher modulus of elasticity than that of the base material of the wiring substrate is disposed between the base material of the wiring substrate and the external-connection terminal.

3. A wiring substrate according to claim 1 or 2, in which the low-elasticity underlayer is made of a material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150 °C.

4. A wiring substrate according to any one of claims 1 to 3, in which the rerouted wiring is covered with a solder resist layer, and the solder resist layer is made of a resist material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150 °C.

5. A wiring substrate according to any one of claims 1 to 4, in which the low-elasticity underlayer extends between the base material of the wiring substrate and the external-connection terminal, the low-elasticity underlayer in the region of the electronic-part mounting pad and the rerouted wiring has a thickness of 50 μm or more, and the low-elasticity underlayer in the region of

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the external-connection terminal has a thickness of 10 μm or less.

6. A wiring substrate according to any one of claims 1 to 5, in which the rerouted wiring is formed in a nonlinear pattern, at least, between the electronic-part mounting pad and the external-connection terminal.

7. A method of manufacturing a wiring substrate equipped with a rerouted wiring having one end connected to an electronic-part mounting pad for electrically connecting an electronic part and another end connected to an external-connection terminal, the method comprising the steps of:

forming a low-elasticity underlayer, from a material having a lower modulus of elasticity than that of a base material of the wiring substrate, in a pattern to which the external-connection terminal formed on the base material of the wiring substrate is exposed; and

forming the electronic-part mounting pad and the rerouted wiring in predetermined patterns, respectively, on the low-elasticity underlayer.

8. A method of manufacturing a wiring substrate according to claim 7, which comprises the steps of:

forming a high-elasticity underlayer from a material having a higher modulus of elasticity than that of the base material of the wiring substrate, on the base material of the wiring substrate; and

forming the external-connection terminal in a predetermined pattern on the high-elasticity underlayer.

Sub A2 9. A method of manufacturing a wiring substrate according to claim 7 or 8, which comprises the steps of:

forming a low-elasticity underlayer from a material having a Young's modulus of less than 1 GPa measured at a room temperature (20 to 30 °C) and a Young's modulus of 10 MPa or less measured at 150 °C, on the base material of the wiring substrate;

forming a through-hole that extends from

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the upper surface of the low-elasticity underlayer to the rerouted wiring on the base material located at the lower surface of the low-elasticity underlayer, at a predetermined position of the low-elasticity underlayer; and

forming, by plating, a connection via-hole in the through-hole, the electronic-part mounting pad, and the rerouted wiring.

10. A method of manufacturing a wiring substrate equipped with a rerouted wiring having one end connected to an electronic-part mounting pad for electrically connecting an electronic part and another end connected to an external-connection terminal, the method comprising the steps of:

forming a high-elasticity underlayer from a material having a higher modulus of elasticity than that of a base material of the wiring substrate, followed by forming a low-elasticity underlayer from a material having a lower modulus of elasticity than that of the base material in a region smaller than the region of the high-elasticity underlayer, and forming a conductive metal layer in substantially the same region as that of the high-elasticity underlayer; and

selectively removing the conductive metal layer, thereby forming the electronic-part mounting pad, the rerouted wiring, and the external-connection terminal in predetermined patterns, respectively.

11. A method of manufacturing a wiring substrate equipped with a rerouted wiring having one end connected to an electronic-part mounting pad for electrically connecting an electronic part and another end connected to an external-connection terminal, the method comprising the steps of:

forming a low-elasticity underlayer from a material having a lower modulus of elasticity than that of a base material of the wiring substrate, followed by forming a high-elasticity underlayer from a material

having a higher modulus of elasticity than that of the base material in a region smaller than the region of the low-elasticity underlayer, and forming a conductive metal layer in substantially the same region as that of the low-elasticity underlayer; and

selectively removing the conductive metal layer, thereby forming the electronic-part mounting pad, the rerouted wiring, and the external-connection terminal in predetermined patterns, respectively.

12. A semiconductor device comprising a wiring substrate equipped with a rerouted wiring having one end connected to an electronic-part mounting pad for electrically connecting an electronic part and another end connected to an external-connection terminal, and an electronic part electrically connected and mounted on the pad of the wiring substrate, in which a base body of said wiring substrate comprises a low-elasticity underlayer, made of a material having a lower modulus of elasticity than that of a base material, between the base material of the wiring substrate and each of the electronic-part mounting pad and the rerouted wiring.

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